



Billing Code 8120-08-P

TENNESSEE VALLEY AUTHORITY

Cumberland Fossil Plant Coal Combustion Residuals Management Operations Final Environmental Impact Statement

AGENCY: Tennessee Valley Authority.

ACTION: Record of Decision.

SUMMARY: This notice is provided in accordance with the Council on Environmental Quality's regulations and Tennessee Valley Authority's (TVA) procedures for implementing the National Environmental Policy Act (NEPA). TVA has decided to construct and operate a bottom ash dewatering facility, process water basins, and an onsite landfill at the Cumberland Fossil Plant (CUF). The notice of availability (NOA) of the Final Environmental Impact Statement (EIS) for the Cumberland Fossil Plant Coal Combustion Residuals Management Operations was published in the **Federal Register** on April 20, 2018. The Final EIS identified TVA's preferred alternative as Alternative C, which includes the Construction and Operation of a Bottom Ash Dewatering Facility, Closure-In-Place of the Bottom Ash Impoundment, and a combination of Closure-in-Place and Closure-by-Removal of the Main Ash Impoundment and Stilling Impoundment. The portion of the Main Ash Impoundment and the Stilling Impoundment that would be Closed-by-Removal would be repurposed as Process Water Basin 1 and Process Water Basin 2, with coal combustion residuals (CCR) that are removed from the impoundment transported to an existing onsite landfill. In addition, under Alternative C, TVA would construct an onsite landfill to manage future CCR produced at CUF. TVA's

current decision pertains only to the construction and operation of a Bottom Ash Dewatering Facility, construction and operation of the new onsite CCR Landfill, and construction of the Process Water Basins, which includes removal of CCR from a portion of the Main Ash Impoundment and the Stilling Impoundment. TVA is electing to further consider the location for permanent disposal of the ash excavated from the Main Ash Impoundment and the Stilling Impoundment. CCR removed for construction of the basins would be staged temporarily within the Main Ash Impoundment footprint until a final decision is made (following any necessary supplemental environmental review) on a location for permanent disposal of the material. The preferred alternative would achieve the project purpose and need of converting the wet storage of CCR to a dry system and promoting the future management of dry CCR at CUF by converting to dry bottom ash handling and providing additional long-term disposal for dry CCR materials produced at CUF. In addition to state and federal water and waste regulations, TVA's CCR disposal areas at CUF, including the impoundments, are subject to the 2015 Commissioner's Order entered by the Tennessee Department of Environment and Conservation (TDEC). Investigations at CUF under that Order are ongoing. Therefore, TVA is electing to further consider the proposed in-place closure of the Bottom Ash Impoundment and a portion of the Main Ash Impoundment before making a decision on closure of these facilities. In addition, TVA is electing to further consider the location for permanent disposal of the ash excavated from the Main Ash Impoundment and the Stilling Impoundment.

FOR FURTHER INFORMATION, CONTACT: Ashley Pilakowski, Project Environmental Planning, NEPA Project Manager, Tennessee Valley Authority, 400 W Summit Hill Drive (WT 11D). Knoxville, Tennessee 37902; telephone (865) 632-2256, or

by email aapilakowski@tva.gov. The Final EIS, this Record of Decision (ROD) and other project documents are available on TVA's website <https://www.tva.gov/nepa>.

SUPPLEMENTAL INFORMATION:

TVA is a corporate agency of the United States that provides electricity for business customers and local power distributors serving more than 9 million people in an 80,000 square miles comprised of most of Tennessee and parts of Virginia, North Carolina, Georgia, Alabama, Mississippi, and Kentucky. TVA receives no taxpayer funding, deriving virtually all of its revenues from sales of electricity. In addition to operating and investing its revenues in its power system, TVA provides flood control, navigation and land management for the Tennessee River system and assists local power companies and state and local governments with economic development and job creation.

Built between 1968 and 1973, the two-unit plant at CUF generates enough energy to supply about 1.1 million homes. The plant consumes an average of 5.6 million tons of coal annually and produces nearly 1 million tons of CCR each year. The CCR consist of fly ash, bottom ash, commercial grade gypsum, and solids from the flue gas desulfurization (FGD) process. TVA has managed storage of CCR materials at CUF in a combination of dry stacks and impoundments. Bottom ash generated by the operating units is sluiced to the existing Bottom Ash Impoundment where most of the material settles out. The settled bottom ash is excavated and stacked in the Fly Ash Stack. Water from the Bottom Ash Impoundment flows to the Main Ash Impoundment and Stilling Impoundment before being discharged to the Cumberland River through a permitted outfall. Fly ash is transported in dry form to the Fly Ash Stack. Gypsum is dewatered and conveyed to an adjacent wall-board manufacturer or disposed in the Gypsum Stack or to

lined channels where it is dewatered, stockpiled for later use, or disposed in the Gypsum Stack.

The approximately 2,470 megawatts of generating capacity provided by CUF is important in maintaining an adequate and reliable power supply to the north-central portion of TVA's service area. Accordingly, CUF was identified in TVA's 2015 Integrated Resource Plan as one of the coal plants that TVA plans to continue operating in the future. The purpose of the proposed action is to convert the wet storage of CCR to a dry system, to promote the future management of dry CCR at CUF, and to meet the state and federal regulatory requirements for closing ash impoundments including EPA's CCR Rule. The project helps fulfill TVA's goal to convert wet CCR storage to dry and applies to both existing CCR (CCR in the impoundments) and future CCR (dry CCR that would be produced from CUF operations under all of the alternatives). In addition, the dewatering facilities would also foster TVA's compliance with present and future regulatory requirements. This includes the 2015 TDEC Commissioner's Order that requires TVA to evaluate and remediate, if necessary, CCR risks at its plants in Tennessee, except Gallatin. The TDEC Commissioner's Order and other environmental regulatory programs help ensure that CCR management activities at TVA's plants will continue to be protective of human health and the environment.

To enable this wet-to-dry conversion, TVA proposes several projects including: construction and operation of a Bottom Ash Dewatering Facility; closure of the existing ash impoundments; construction and operation of process water basins to handle process wastewater and storm water that previously was routed to the impoundments; and construction and operation of a landfill within the boundaries of TVA owned property on CUF (onsite) for disposal of future dry CCR generated at the plant.

Alternatives Considered

Based on an extensive analysis of options to manage CCR produced at CUF, TVA considered four alternatives in the Draft EIS and Final EIS. These alternatives are:

Alternative A – No Action. Under this Alternative, TVA would not construct the proposed Bottom Ash Dewatering Facility and current operations for handling sluiced bottom ash would not change. TVA would not close the ash impoundments. Accordingly, TVA would not seek additional disposal options for dry placement of CCR generated at CUF. Rather, CCR would continue to be managed in the current impoundments and onsite stacks for as long as storage capacity is available. The No Action Alternative is not consistent with other actions that TVA could be required to take in response to the CCR Rule and other regulatory programs including the TDEC Commissioner's Order.

Consequently, this alternative would not satisfy the project purpose and need and, therefore, is not considered viable or reasonable. It does, however, provide a benchmark for comparing the environmental impacts of implementation of Alternatives B, C, and D.

Alternative B – Bottom Ash Dewatering Facility, Ash Impoundment Closure (In-Place or By-Removal to Offsite Landfill), Onsite Landfill for Future CCR Produced at CUF. Under Alternative B, TVA would complete a series of actions to manage CCR produced at CUF. These actions include:

1. Construct and operate a Bottom Ash Dewatering Facility at one of two previously disturbed sites proximate to the Main Plant. TVA may construct a recirculation system in a subsequent phase where excess water would be routed back to the plant for future sluicing or other allowed reuse operations. The recirculation system would be contained within the existing facility footprint.

2. Consolidation and Closure-in-Place of the Bottom Ash Impoundment and North Ditch. Closure-by-Removal of a portion of the Main Ash Impoundment and the Stilling Impoundment and repurposing the closed portion as lined Process Water Basin 1 and Process Water Basin 2. To facilitate construction of the lined process water basins, CCR from these areas, plus a foot of underlying soil would be removed and transported to an approved offsite disposal facility. Specifically, approximately 180,000 yd³ of CCR material would be removed from the Stilling Impoundment and approximately 245,700 yd³ of CCR material would be removed from the Main Ash Impoundment. A geosynthetic clay liner would be installed over these areas followed by a non-woven geotextile cushion and 18 inches of protective cover.

3. Construct and operate a landfill for disposal of future dry CCR generated at the plant on a site located approximately 1.2 miles southwest of the plant site which is still on CUF property. The selected site encompasses approximately 174 acres with a landfill footprint of approximately 80 acres. The landfill would be built in four major stages with a total estimated capacity of 14.3 million yd³. At current generation levels, the closure date of this landfill is approximately 2040. In the event beneficial reuse via marketing continues at its current rate, the landfill closure is approximately 2100. The estimated capacity provides adequate CCR storage for long-range planning purposes.

Alternative C – Bottom Ash Dewatering Facility, Ash Impoundment Closure (In-Place or By-Removal to Existing Onsite Landfill), Onsite Landfill for Future CCR Produced at CUF. Under Alternative C, TVA would construct and operate a series of related actions to manage CCR produced at CUF. These actions include:

1. Construct and operate a Bottom Ash Dewatering Facility as described for Alternative B.

2. Consolidation and Closure-in-Place of the Bottom Ash Impoundment and North Ditch. Closure-by-Removal of a portion of the Main Ash Impoundment and Stilling Impoundment and repurpose the closed portion as lined Process Water Basin 1 and Process Water Basin 2. The closure of the ash impoundments under this option would be the same as described under Alternative B. However, under this alternative, CCR removed from the ash impoundments would be transported to the existing onsite landfill (Fly Ash Stack) for long-term storage.

3. Construct and operate a landfill for disposal of future dry CCR generated at the plant onsite as described under Alternative B.

Alternative D – Bottom Ash Dewatering Facility, Ash Impoundment Closure (In-Place or By-Removal to Offsite Landfill), Offsite Landfill for Future CCR Produced at CUF. Under Alternative D, TVA would construct and operate a series of related actions to manage CCR produced at CUF. These actions include:

1. Construct and operate a Bottom Ash Dewatering Facility as described for Alternative B.

2. The closure of the ash impoundments under this option would be the same as described under Alternative B.

3. Dry CCR produced at CUF would be transported by truck to an offsite landfill, the Bi-County Solid Waste Management Landfill (located approximately 12 miles northeast of CUF) along public roadways. No landfill would be constructed at CUF.

Barge and rail transport were not considered feasible options for this EIS as the facilities at CUF are not configured and designed to support loading and transport of CCR offsite

and as such would need to be expanded and improved which could result in environmental impacts and would require additional environmental permitting. In addition, rail and barge facilities are not typical near permitted landfills and are not available at the Bi-County Solid Waste Management Landfill. Therefore, any CCR hauled by barge or rail for landfill disposal would still entail trucking.

Environmentally Preferred Alternative

The EIS includes baseline information for understanding the potential environmental and socioeconomic impacts associated with the alternatives considered by TVA. TVA considered 21 resource areas related to the human and natural environments and the impacts on these resources associated with each alternative.

Alternative A (No Action) would result in fewer environmental impacts than Alternative B, C and D. However, Alternative A does not meet the purpose and need for the project as continuing current operations would not promote the future management of dry CCR at CUF, and would not meet the state and federal regulatory requirements for closing ash impoundments including EPA's CCR Rule and the TDEC Commissioner's Order. Implementation of Alternative B would result in minimal unmitigated impacts to the environment, most of which would be related to construction activities that would be temporary in nature and minimized with implementation of best management practices. The landfill would change the existing visual integrity which would result in a long-term moderate impact to the viewshed of some members of the surrounding community. Scenic attractiveness may be reduced to minimal in the foreground, but would remain common in the middleground and background. Long-term impacts to streams, aquatic and cultural resources, alteration of bat foraging habitat, and impacts to 0.5 acre of wetland associated with construction of an onsite landfill would be mitigated as

described below. The transport of CCR from a portion of the Main Ash Impoundment and the Stilling Impoundment to an existing offsite landfill would result in air emissions, increased traffic and associated long-term safety risks, and disruptions to the public that would be related to such off-site transport. Impacts associated with Alternative C would be the same as for Alternative B, except this alternative would avoid the offsite transport of existing CCR from the Closure-by-Removal of a portion of the Main Ash Impoundment and the Stilling Impoundment as CCR removed from these facilities would be transported to the existing onsite landfill. Under Alternative D, impacts associated with the construction and operation of the Bottom Ash Dewatering Facility would be the same as Alternatives B and C. There would be no impacts to the natural environment associated with taking CCR to an offsite landfill. However, impacts to air quality, transportation, public health and safety would be higher than Alternatives B and C because of the transport of existing CCR from the Closure-by-Removal of the Main Ash Impoundment and the Stilling Impoundment as well as the transport of future CCR generated at CUF to an offsite landfill.

TVA determined that Alternative C, which avoids the offsite transport of CCR on public roadways would be the environmentally preferable alternative.

Public Involvement

On December 5, 2016, TVA published a Notice of Intent (NOI) in the **Federal Register** announcing that it planned to prepare an EIS to address the management of CCR at CUF. The NOI initiated a public scoping period, which concluded on January 6, 2017. In addition to the NOI in the **Federal Register**, TVA published notices regarding this effort in regional and local newspapers; issued a news release to the media outlets; and posted the news release on the TVA website to solicit public input. TVA also developed

an initial project mailing list that included local and regional stakeholders, governments and other interested parties. Letters were sent to notify those on the list of the project. Approximately 350 postcards were also mailed to all residents within 3 miles of the CUF plant.

TVA also hosted an open house public scoping meeting on December 12, 2016, at the Freedom Point Events Center at Liberty Park in Clarksville, Tennessee. Comments received addressed project alternatives, adequacy of impact analysis, groundwater and surface water, aquatic ecology, tiering from the PEIS, and other general topics

The Notice of Availability (NOA) of the Draft EIS was published in the **Federal Register** on November 17, 2017, initiating a 45-day public comment period. The Draft EIS was posted on TVA's web site and hard copies were available by request. To solicit public input, the availability of the Draft EIS was announced in regional and local newspapers and a news release was issued to the media and posted to TVA's web site. TVA hosted a public meeting on November 28, 2017, at the Cumberland City Fire Hall in Cumberland City, Tennessee. Notification of the public meeting was sent to all addresses within 3 miles of the CUF plant, and was also published in local newspapers. TVA's agency involvement included sending letters to local, state, and federal agencies and federally recognized tribes to notify them of the availability of the Draft EIS. The public comment period closed on January 2, 2018.

TVA received 69 comments from 15 commenters. Of the 15 submissions, three were from federal entities, one was from a state entity, one was from a group of environmental advocacy organizations, and 10 were from members of the public. Comments were received in relation to the Draft EIS's sufficiency, compliance with the CCR Rule and TDEC Commissioner's Order, selection of the preferred alternative, groundwater and

surface water impacts, local geology, air impacts, solid waste management, and other general topics. TVA provided responses to these comments, made appropriate minor revisions to the Draft EIS, and issued a Final EIS.

The NOA for the Final EIS was published in the **Federal Register** on April 20, 2018.

Decision

TVA has decided to implement portions of the preferred alternative identified in the Final EIS, Alternative C. This decision includes the construction and operation of a Bottom Ash Dewatering Facility, construction and operation of an onsite landfill, and Closure-by-Removal of a portion of the Main Ash Impoundment and the Stilling Impoundment. The closed area would be repurposed as Process Water Basin 1 and Process Water Basin 2. CCR removed for construction of the basins would be staged temporarily within the Main Ash Impoundment, and TVA will further consider its options before making a decision as to the location for the permanent disposal of the CCR. TVA will issue a decision regarding this and any additional documentation at a future date.

In addition to state and federal water and waste regulations, TVA's CCR disposal areas at CUF, including the impoundments, are subject to the 2015 TDEC Commissioner's Order. Therefore, it is TVA's intention not to pursue Closure-in-Place activities immediately, but rather let the execution of the requirements of the TDEC Commissioner's Order guide the closure activities to the maximum extent possible while complying with the requirements of the CCR Rule. TVA will issue a decision regarding closure of the remaining portion of the Main Ash Impoundment and the Bottom Ash Impoundment and any additional documentation at a future date.

Mitigation Measures

TVA will use appropriate best management practices during all phases of construction and operation of the Bottom Ash Dewatering Facility, the process water basins and the landfill. Mitigation measures, actions taken to reduce adverse impacts associated with the proposed action, include:

- A TDEC Aquatic Resources Alteration Permit and U.S. Army Corps of Engineers 404 permit will be required for disturbance to wetlands and stream features, and the terms and conditions of these permits would likely require mitigation for these proposed activities. TVA will adhere to all conditions stipulated in these permits.
- TVA will implement supplemental groundwater mitigation measures that could include monitoring, assessment, or corrective action programs as mandated by state and federal requirements. The CCR Rule and state requirements provide an additional layer of groundwater protection to minimize risk.
- TVA will coordinate with the Tennessee Department of Transportation and Stewart County transportation officials as needed to develop appropriate mitigation measures to reduce localized temporary transportation effects.
- Potential impacts to Wells Creek and/or Scott Branch from landfill leachate and storm water discharges will be mitigated as required to meet permit requirements.

- Forested land within the proposed landfill project area is of low summer roosting quality for threatened and endangered bats, although it may be used as a foraging area. Section 7 consultation with U.S. Fish and Wildlife Service has been completed. No tree removal would occur between June 1 and July 31 to avoid any potential direct impact to juvenile bats at a time when they are unable to fly.
- TVA executed a memorandum of agreement with the Tennessee State Historic Preservation Officer to address the adverse effects of National Register of Historic Places listed site 40SW219.

Dated: May 31, 2018.

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